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IS 4699 (1984): Refined secondary zinc [MTD 9: Lead, Zinc, Cadmium, Tin, Antimony and their Alloys]



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“Knowledge is such a treasure which cannot be stolen”

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Indian Standard
**SPECIFICATION FOR
REFINED SECONDARY ZINC**
(First Revision)

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
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Price Group 2

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SPECIFICATION FOR
REFINED SECONDARY ZINC
(First Revision)

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Indian Standard
SPECIFICATION FOR
REFINED SECONDARY ZINC
(*First Revision*)

0. FOREWORD

0.1 This Indian Standard (First Revision) was adopted by the Indian Standards Institution on 25 September 1984, after the draft finalized by the Lead, Zinc, Antimony and Their Alloys Sectional Committee had been approved by the Structural and Metals Division Council.

0.2 This standard was first published in 1968. In this revision some modifications in regard to chemical composition for both the grades have been made.

0.3 In order to conserve scarce metals, such as copper, lead, zinc, tin and antimony, the use of refined secondary metals is being encouraged in the country. This Indian Standard covers the requirements for refined secondary zinc, which could be employed for galvanizing and in the manufacturer of various types of brasses, bronzes and certain grades of zinc oxide.

0.4 This standard keeps in view the manufacturing and trade practices followed in the country in this field.

0.5 This standard contains clauses **2.2**, **4.1** and **6.2** which call for agreement between the purchaser and the manufacturer.

0.6 This edition 2.1 incorporates Amendment No. 1 (May 2003). Side bar indicates modification of the text as the result of incorporation of the amendment.

0.7 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard covers the requirements for two grades of refined secondary zinc, namely, SZn 99.5 and SZn 98.5.

*Rules for rounding off numerical values (*revised*).

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2. SUPPLY OF MATERIAL

2.1 General requirements relating to the supply of refined secondary zinc shall be as laid down in IS : 1387-1967*.

2.2 The material shall be supplied in the form of ingots, bars, plates or rods as agreed to between the purchaser and the manufacturer.

3. MANUFACTURE

3.1 Refined secondary zinc may be produced from galvanizer's dross, ash and skimmings or any other zinc-bearing alloys and scraps by electrolytic or thermal recovery processes.

4. CHEMICAL COMPOSITION

4.1 The chemical composition of the two grades of refined secondary zinc shall be as given in Table 1.

TABLE 1 CHEMICAL COMPOSITION OF REFINED SECONDARY ZINC

SL NO.	CONSTITUENT	REQUIREMENT, PERCENTAGE	
		Grade SZn 99.5	Grade SZn 98.5
(1)	(2)	(3)	(4)
i)	Zinc, <i>Min</i>	99.5	98.5
ii)	Lead, <i>Max</i>	0.35	1.35
iii)	Cadmium, <i>Max</i>	0.10	0.10
iv)	Iron, <i>Max</i>	0.03	0.04
v)	Tin, <i>Max</i>	0.005	0.02
vi)	Total impurities, <i>Max</i>	0.5	1.5

NOTE — For other impurities, such as aluminium and copper the limits shall be as agreed to between the purchaser and the manufacturer.

4.2 The chemical composition shall be determined either by the method specified in IS : 406-1964† or any other established instrumental/chemical method. In case of dispute the procedure specified in IS : 406-1964† for chemical analysis, shall be the Refree method.

*General requirements for the supply of metallurgical materials (*first revision*).

†Methods of chemical analysis of slab zinc (*revised*).

5. FREEDOM FROM DEFECTS

5.1 Ingots shall be reasonably free from dross, slag and other foreign inclusions.

6. MASS

6.1 Unless specified otherwise the mass of each ingot shall be not more than 30 kg.

6.2 When zinc is supplied in any form other than ingot, that is, plates, bars or rods, the mass of the same shall be mutually agreed to between the purchaser and the manufacturer.

7. SAMPLING

7.1 Unless otherwise agreed to between the purchaser and the manufacturer, 5 percent of the ingots shall be selected from each 1 000 kg consignment or part thereof representing one grade of metal produced under uniform conditions and offered for inspection at one time.

7.2 The method of preparing samples for chemical analysis from the ingots selected under **7.1** shall be in accordance with IS : 1817-1961*.

8. RETEST

8.1 If any sample prepared under **7.2** fails to meet the requirements specified under **4.1** two more tests shall be conducted on the same sample in order to confirm that the analysis has been done properly. If both the tests results satisfy the relevant requirements, the lot shall be accepted. Should either of the re-tests fail, the lot represented shall be deemed as not complying with this standard.

9. MARKING

9.1 Each ingot shall be legibly marked with:

- a) Cast number,
- b) Grade of materials, and
- c) Manufacturer's initial or trade mark.

NOTE — In case the material is supplied in any form other than ingots to meet the purchaser's requirements, the material shall be suitably marked with the above details.

*Methods of sampling non-ferrous metals for chemical analysis.

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9.1.1 The material may also be marked with the ISI Certification Mark.

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